

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401115F C-130 AIRLIFT SQUADRONS				PROJECT 4885	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4885 Avionics Modernization Program (AMP)	63,286	59,928	158,978	180,534	159,874	141,626	113,723	38,127	936,126
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

In FY 2003, Project 4726, Avionics Modernization Program (AMP), was changed to Project 4885 (same name) to correct an administrative error. This action did not change program content nor funding.

(U) A. Mission Description

The C-130 Avionics Modernization Program (AMP) consolidates and installs the mandated DOD Navigation/Safety mods, the Global Air Traffic Management (GATM) systems and the C-130 Broad Area Review requirements on the AF's 519 C/AC/EC/HC/LC/MC-130s that are not being replaced with new C/EC/WC-130Js. These mandated mods are incorporated in conjunction with various other Reliability, Maintainability, and Sustainability (RM&S) upgrades to include: TCAS, TAWS, replacement of APN-59 & APQ-175 radars, N-1/C-12 compass, dual autopilots, dual flight management systems and HF/UHF/VHF datalink to constitute C-130 AMP. AMP will give the AF's 519 C/AC/EC/HC/LC/MC-130s complete access to the GATM-controlled international air space.

The USAF C-130 fleet consists of 15 different mission design series (MDS) to be modified by the AMP. Within each of these MDSs are multiple variants (C-130H2, etc.) to be modified by AMP. These multiple different models and cockpit configurations create significant logistics support and aircrew training inefficiencies. Also, these differences greatly complicate unit/aircraft interoperability at forward operating locations. C-130 AMP standardizes the cockpit configurations and avionics for these different variants by installing a core avionics package and a single cockpit configuration, eliminating many of these significant logistics, interoperability and training problems. (Note: The new C/EC/WC-130J aircraft are not included in this C-130 AMP program).

The funding shown here and in the C-130 AMP procurement documentation (P-Docs) is for AMP and those portions of USSOCOM's Common Avionics Architecture for Penetration (CAAP) modification, which are incorporated into AMP. However, SOCOM's CAAP-unique portion is funded in MFP-11, and these funds are not shown here.

The Boeing Company was awarded the AMP contract on 30 July 01. Their program provides the NRE for all the C-130 variants and modifies the entire fleet. Each variant or group of variants will require a specific kit development and test. Then, each will proceed through development and production serially. This waterfall approach will result in an orderly development and production sequencing for the 15 different C-130 MDSs.

Boeing will conduct a Training System Requirements Analysis (TSRA), beginning in FY01. From this TSRA, an AF-fleetwide training system will be developed for the AMP/CAAP-modified fleet. This will include upgrading all AC/C/EC/HC/LC/MC-130 Weapons Systems Trainers (WSTs) to incorporate the AMP/CAAP modifications. The training requirement defined through the TSRA may require additional funding.

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07 - Operational System Development	0401115F C-130 AIRLIFT SQUADRONS	4885
<p>(U) <u>A. Mission Description Continued</u> Development activities in FY02 will focus on two areas: AMP architecture and kit development for the first Combat Delivery aircraft (C-130H2) and the first special mission aircraft (MC-130H), as well as software development of the SOF AMP and Common Avionics Architecture for Penetration (CAAP) capabilities, which will be integrated into the special mission aircraft concurrent with AMP. NOTE: The majority of AMP (to include efforts associated with AFSOC aircraft) will be funded by MFP 6; MFP 11 funds CAAP efforts only (\$13M in FY02).</p>		
<p>(U) <u>FY 2001 (\$ in Thousands)</u></p>		
(U) \$52,573	Award EMD contract. Begin design and software development. This includes beginning detailed group A & B design series, hardware/software development of crew station modules/computer simulation, initiate design of system integration lab (SIL), begin the TSRA and begin CAAP's Risk Mitigation testing.	
(U) \$10,713	Program office support (TDY, training and supplies).	
(U) \$63,286	Total	
<p>(U) <u>FY 2002 (\$ in Thousands)</u></p>		
(U) \$45,235	Contractor continues program staffing and ramp-up. Continues design and software development. This includes continuing detailed group A & B (A is acft wiring and install points, B are the actual avionics boxes) design series, hardware/software development of crew station modules/computer simulation, design of system integration lab (SIL), development of training system, and continue CAAP Risk Mitigation testing. The Systems Requirements Review (SRR), System Design Review (SDR) and Software Specification Review (SSR) are projected to be completed in FY02 for the C-130 AMP configuration and SOF AMP/CAAP configuration. NOTE: The \$20M cut in FY02 was due to late contract award. Efforts associated with these funds were slipped into FY03.	
(U) \$7,200	Engineering Change Orders (ECO), Govt Furnished Parts and Information (GFP/GFI) and Award Fee	
(U) \$1,020	Developmental Test and Evaluation	
(U) \$6,473	Program office support (TDY, training and supplies).	
(U) \$59,928	Total	
<p>(U) <u>FY 2003 (\$ in Thousands)</u></p>		
(U) \$125,538	Ramp up and design specification will be substantially completed in FY03 allowing software coding at proceed full speed and developmental hardware acquisition to begin. Detailed design work will continue for both Group A and B equipment on follow on MDS'. We will continue development of the training systems based on the results of the Training Systems Requirements Analysis (TSRA) scheduled to be complete in the 3rd Quarter of FY 2003. Preliminary Design Review (PDR) and Critical Design Review (CDR) for both the C-130 Core and SOF AMP will be completed in FY03. New efforts will include the acquisition of avionics hardware to support the software integration efforts associated	
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<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands) Continued</u></p> <p style="margin-left: 40px;">with both the Core Operational Flight Program (OFP) and the Combat Talon OFP. After completion of the software design as documented by the CDR for the C-130 core and SOF AMP variants, we will begin coding and unit testing for the software integration facility. Efforts will begin for trail installs of the AC-130 and HC-130 in FY05. Software and avionics account for approximately 50% of the FY03 budget.</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">(U)</td> <td style="width: 15%;">\$16,510</td> <td style="width: 75%;">Engineering Change Orders (ECO), Govt Furnished Parts and Information (GFP/GFI) and Award Fee</td> </tr> <tr> <td>(U)</td> <td>\$4,700</td> <td>Developmental Test and Evaluation</td> </tr> <tr> <td>(U)</td> <td>\$5,370</td> <td>Training System development upgrades</td> </tr> <tr> <td>(U)</td> <td>\$6,860</td> <td>Program office support (TDY, training and supplies).</td> </tr> <tr> <td>(U)</td> <td>\$158,978</td> <td>Total</td> </tr> </table> <p>(U) <u>B. Budget Activity Justification</u></p> <p style="margin-left: 40px;">C-130 Avionics Modernization Program (AMP): This project is in Budget Activity 7, Operational Systems Development as it is a major avionics and cockpit configuration modernization to the C/AC/EC/LC/MC/-130 fleet of AF aircraft.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 55%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 15%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: right;">60,496</td> <td style="text-align: right;">80,533</td> <td style="text-align: right;">158,978</td> <td style="text-align: right;">936,126</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: right;">60,496</td> <td style="text-align: right;">60,533</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="margin-left: 20px;">a. Congressional/General Reductions</td> <td style="text-align: right;">-423</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="margin-left: 20px;">b. Small Business Innovative Research</td> <td style="text-align: right;">-1,840</td> <td style="text-align: right;">-605</td> <td></td> <td></td> </tr> <tr> <td style="margin-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="margin-left: 20px;">d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="margin-left: 20px;">e. Rescissions</td> <td style="text-align: right;">-131</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td style="text-align: right;">5,184</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: right;">63,286</td> <td style="text-align: right;">59,928</td> <td style="text-align: right;">158,978</td> <td></td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p> <p style="margin-left: 40px;">On 30 Jul 01, C-130 AMP contract awarded to Boeing. Congress reduced the FY 02 Program by \$20M based on a late contract award date. The program has ramped up rapidly to compensate for the late initial award expects to be ready for all scheduled FY03 events.</p>			(U)	\$16,510	Engineering Change Orders (ECO), Govt Furnished Parts and Information (GFP/GFI) and Award Fee	(U)	\$4,700	Developmental Test and Evaluation	(U)	\$5,370	Training System development upgrades	(U)	\$6,860	Program office support (TDY, training and supplies).	(U)	\$158,978	Total		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	60,496	80,533	158,978	936,126	(U) Appropriated Value	60,496	60,533			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-423				b. Small Business Innovative Research	-1,840	-605			c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions	-131				(U) Adjustments to Budget Years Since FY 2002 PBR	5,184				(U) Current Budget Submit/FY 2003 PBR	63,286	59,928	158,978	
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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0401115F C-130 AIRLIFT SQUADRONS			PROJECT 4885	
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>								
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>
(U) AF RDT&E								
(U) Other APPN								
(U) PE 0401115F, Avionics Modernization Program (AMP), BP1100					112,800	139,470	221,853	3,067,000
								3,541,123
(U) <u>E. Acquisition Strategy</u>								
The C-130 AMP contract was awarded 30 July 2001. The contract is a Cost Plus Award Fee contract to develop AMP kits for the 15 MDSs within the AF AC/C/EC/HC/LC/MC-130 fleet. Revisions to the AF training system is an option under the AMP contract, which will modify the various Weapons Systems Trainers to the AMP configuration.								
(U) <u>F. Schedule Profile</u>								
		<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>
	1	2	3	4	1	2	3	4
(U) C-130 AMP Contract Award*				X				
(U) C-130 Systems Requirements Review**					X			
(U) C-130 Preliminary Design Review (PDR)							X	
(U) C-130 SOF AMP PDR								X
(U) CDR AMP Hardware								X
(U) CDR AMP Software								X
(U) CDR SOF Hardware								X
(U) Dev Activities - AC-130 & HC-130							X	
* Contract awarded July 2001; ** SRR completed November 2001								

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)										DATE February 2002	
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT	
07 - Operational System Development					0401115F C-130 AIRLIFT SQUADRONS					4885	
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
					<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		
(U) C-130 AMP System Development & Demonstration (SDD)					48,535		43,335		125,538		
(U) Program Office Support					7,216		6,473		6,280		
(U) GFE					310		520		0		
(U) ECO					3,610		3,700		7,640		
(U) Developmental Test and Eval					35		1,020		4,700		
(U) Training System Upgrade					0		0		5,950		
(U) Award Fee					3,580		4,880		8,870		
(U) Total					63,286		59,928		158,978		
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
<u>Contractor or</u>		<u>Contract</u>									
<u>Government</u>		<u>Method/Type</u>		<u>Award or</u>		<u>Performing</u>		<u>Project</u>			
<u>Performing</u>		<u>or Funding</u>		<u>Obligation</u>		<u>Activity</u>		<u>Office</u>		<u>Total Prior</u>	
<u>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>		<u>to FY 2001</u>	
<u>Budget</u>		<u>Budget</u>		<u>Budget</u>		<u>Budget</u>		<u>Budget</u>		<u>Total</u>	
<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		<u>Complete</u>		<u>Program</u>			
<u>Product Development Organizations</u>											
Prime Contractor		CPAF		30 Jul 01		52,573		53,040		147,780	
Note: The Boeing Company won the competition for this program and was awarded 30 Jul 01.											
<u>Support and Management Organizations</u>											
Program Support Office		N/A		N/A		10,713		5,868		6,498	
<u>Test and Evaluation Organizations</u>											
Various								1,020		4,700	
								62,150		67,870	

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Exhibit R-3 (PE 0401115F)

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)						DATE
						February 2002
BUDGET ACTIVITY	PE NUMBER AND TITLE					PROJECT
07 - Operational System Development	0401115F C-130 AIRLIFT SQUADRONS					4885
	<u>Total Prior to FY 2001</u>	<u>Budget FY 2001</u>	<u>Budget FY 2002</u>	<u>Budget FY 2003</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Subtotals</u>						
Subtotal Product Development		52,573	53,040	147,780	560,307	813,700
Subtotal Support and Management		10,713	5,868	6,498	31,477	54,556
Subtotal Test and Evaluation			1,020	4,700	62,150	67,870
Total Project		63,286	59,928	158,978	653,934	936,126

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